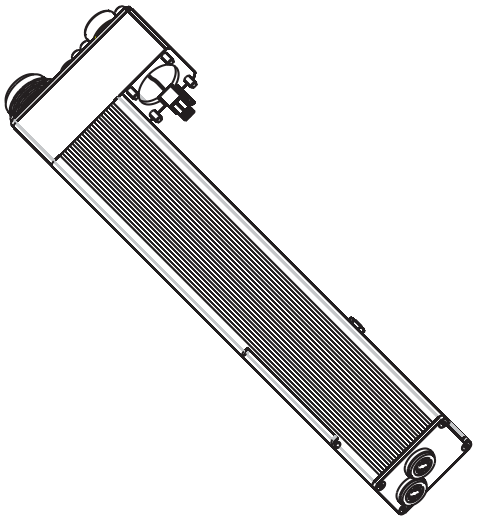
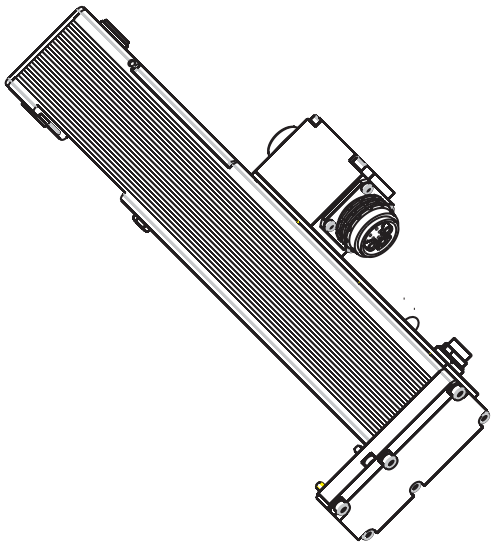
Assembly Instructions
P1918E/EN
2011-06

Tightening module TS/TUS

Serie BTS





For additional product information visit our website at http://www.apextoolgroup.com

About the assembly instruction

This assembly instruction is the – translation of the original assembly instruction – and describe how to remove and install the tightening module in the motor.

Secondary information

P1916E	Assembly instructions DGD-IS built-in nutsetter
P1917E	System handbook m-Pro-400S-DGD-Intelligente-Spindel
P1919E	Assembly instructions Supply module CPS3
P1921E	Service manual DGD-intelligent-spindle
P1792E	Operator information Nutsetter control unit m-Pro-400S
P1779E	System manual nutsetter control unit m-Pro-400S
P1909E	Spare parts sheet Tightening module
P1910E, P1911E, P1912E	Spare parts sheet Attachment
P1913E	Spare parts sheet Gearing
P1914E	Spare parts sheet Motor
P1915K	Spare parts sheet Transducer

Symbols in text

➔	Identifies instructions to be followed.
•	Identifies lists.

Abbreviations

m-Pro-400S(E)	Station controller
m-Pro-400S-CPM…	Nutsetter control unit
TS/TUS	Tightening module
CPS3	Supply module
DGD-ISD	DGD intelligent spindles

Symbols in graphics:

⟵	Identifies movement in a direction.
⇩	Identifies function and force.

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1 Safety

1.1 Warnings and notes

DANGER!

A symbol combined with the word **DANGER** warns of an **impending health risk** or risk of fatal injury to personnel. If this danger note is not adhered to, severest injury that may lead to the death of people, is the consequence.

WARNING!

A symbol combined with the word **WARNING** warns of a **potentially dangerous** situation for the health of personnel, which could result in death or serious injury if not avoided.

CAUTION!

A symbol combined with the word **CAUTION** warns of a **potentially harmful** situation for the health of personnel or damage to property or the environment. If this warning is not observed, injuries, property or environmental damage may occur.

NOTE

This symbol indicates a **general** instruction.
General instructions include application tips and special useful information, but no warnings against dangers.

1.2 Basic requirements for safe working practices

Take the fastening system into service only after you have read and completely understood the following safety instructions and this system manual. Failure to observe the instructions below may result in electric shock, fire and serious injuries.

DANGER!

High leakage current –
Fatal electric shock could occur!

- ➔ Always disconnect the power supply before performing maintenance work on the DGD-IS and the m-Pro-400S-CPM….
- ➔ Always disconnect the system cable, motor or motor cable from the m-Pro-400S-CPM… or DGD-IS before making throughput, resistance and short circuit measurements.
- ➔ Do not attempt to repair possible faults on the fastening system by yourself if you do not have the required knowledge! Inform the local repair center or your Cleco representative.

WARNING!

High temperature –
the motor on the DGD-IS may heat up and cause burns during removal.
(max. engine temperature 90 °C). Wear gloves.

1.3 Operator training

- The fastening system may only be operated by personnel that have been trained and instructed correspondingly and authorized by the operator.
- The fastening system may only be maintained and serviced by personnel instructed by qualified staff from Cleco.
- The operator must make sure that all new operating and maintenance personnel are instructed in the operation and maintenance of the fastening system to the same extent and with the same care and attention.
- Personnel who are being trained may work on the fastening system only under the supervision of an experienced operator.

1.4 Personal protective equipment

When working

- Wear the protective goggles to protect against spurting metal splinters.

1.5 Intended use

The owner is responsible for using the machine according to its designated use.
When assembling the tightening module, the following conditions must be fulfilled so that other components can be attached to the DGD-IS correctly without affecting the safety and health of personnel:

- The tightening module is designed for stationary operation and is intended exclusively for controlling the DGD-IS. Do not use as a hand-held tool.
- Unauthorized alterations, repairs and modifications are prohibited for reasons of safety and product liability.
- Do not operate the tightening module outdoors.

2 Transport / Storage

- Transport only in the original packing.
- If the package is damaged, check the part for visible damage. Inform the carrier or Cleco if necessary.

System components	Storage temperature	Relative humidity
TS/TUS	-20 to 70 °C	0 to 90 % no condensation

3 Attaching TS 961146 to the motor

NOTE

Before replacing a component

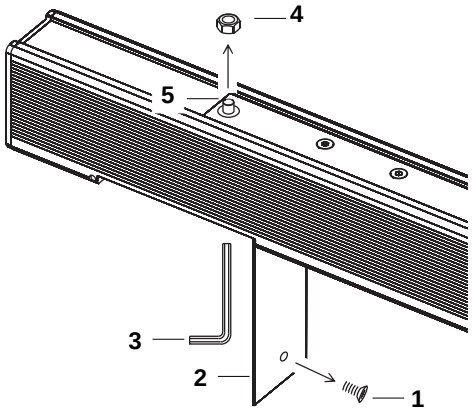
➔ always carry out a machine capability study (MFU).

After assembly

➔ check the calibration of the torque transducer.

➔ check the function of the angle encoder.

We recommend servicing by Cleco.



1.

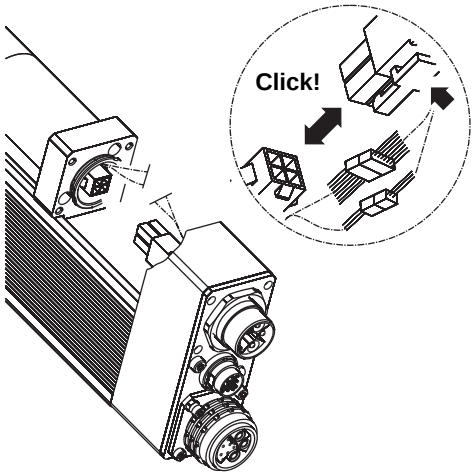
➔ Loosen the countersunk screw **1** ⬡ size 2.5 (ISO 10642, M4).

➔ Open the panel **2**

➔ Counter the screw (in the housing, not illustrated) using Allen key **3** size 5.

➔ Remove the hex nut **4** (lock nut).

O-ring must remain on the screw **5** !
Do not push the screw **5** into the housing! Otherwise you will need to remove the housing.



2.

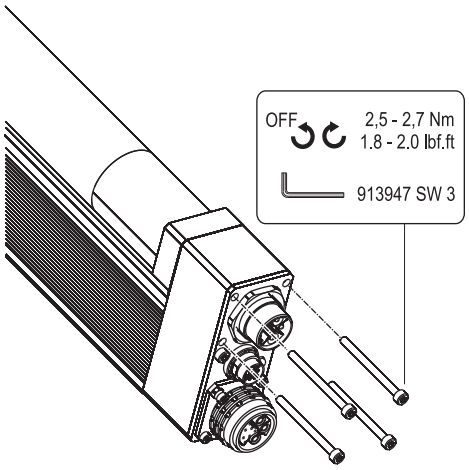
➔ Place the motor in position.

➔ Guide the cable into the housing without damaging. Do not pinch!

➔ Carefully guide the motor into the housing opening.

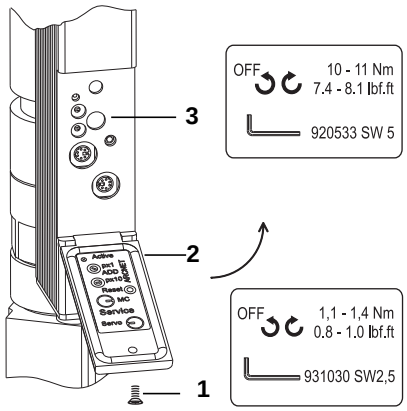
When unscrewing and tightening plug connectors, ensure the following:

➔ Always hold the connector by the housing, not by the cable!



3.

➔ Tighten the screws.



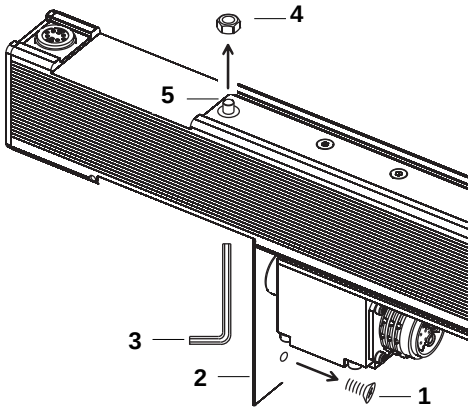
4.

➔ Tighten the screw **3**.

➔ Close the panel **2**.

➔ Tighten the countersunk screw **1** (ISO 10642, M4).

4 Attaching TUS 961147 to the motor



1.

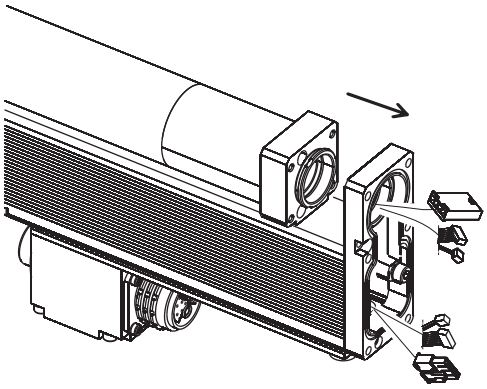
➔ Loosen the countersunk screw **1** ⬡ size 2.5 (ISO 10642, M4).

➔ Open the panel **2**

➔ Counter the screw (in the housing, not illustrated) using Allen key **3** size 5.

➔ Remove the hex nut **4** (lock nut).

➔ O-ring must remain on the screw **5**! Do not push the screw **5** into the housing! Otherwise you will need to remove the housing.

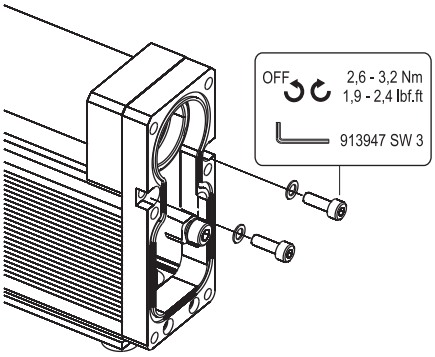


2.

➔ Guide the cable through the housing without damaging.

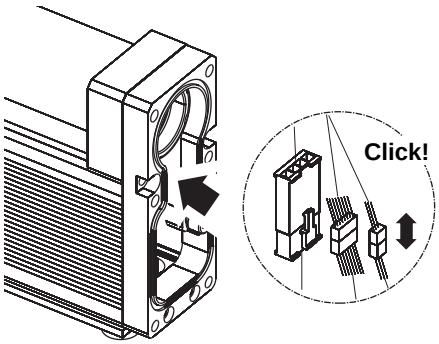
When unscrewing and tightening plug connectors, ensure the following:

➔ Always hold the connector by the housing, not by the cable!



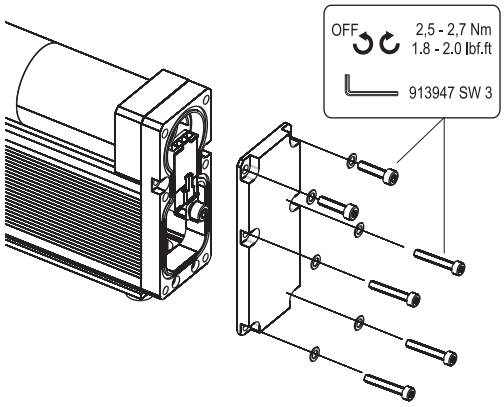
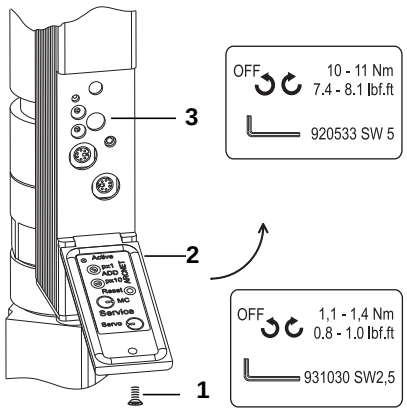
3.

➔ Tighten the screws.



4.

➔ Carefully place the connector in the housing opening. Do not pinch the cable!

 **5.**	➔ Tighten the screws.
 **5.**	➔ Tighten the screw **3**. ➔ Close the panel **2**. ➔ Tighten the countersunk screw **1** (ISO 10642, M4).

Sales & Service Centers

Note: All locations may not service all products. Please contact the nearest Sales & Service Center for the appropriate facility to handle your service requirements.

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